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Have you been told that you have a disease called age-related macular degeneration, or

AMD? If you have been told this, vou're not alone.

Pupil Sclera

Millions of people

in this country

have some type of AMD. In fact, it is the most common reason people over the age of 65 can lose their central vision. New studies suggest that it can happen as early as age 55. People with AMD can potentially become legally blind.

AMD is a disease of the retina. That's the place in the back of your eye where light is changed

to electrical impulses,

which are then sent to your brain so

vou can see.

Sclera Vitreous Iris Choroid Cornea Optic nerve Pupil Macula Conjunctiva Retina



There are two types of AMD, wet and dry. Dry AMD is associated with small yellow particles called drusen and black particles called pigment change. These are deposits in the macula, which is the part of the retina that keeps your central vision clear and sharp. About nine out of 10 people with AMD have the dry type, with little or no vision loss.

People with wet AMD can have large drusen, and often a lot more drusen than people with dry AMD. In wet AMD, new blood vessels begin to grow under the retina in the macula area. Then they break and start to leak. This is why this disease is called wet AMD. The leaking blood vessels lead to severe loss of vision in the middle of your eyesight. About one in 10 people with AMD will develop the wet form.

## Who's at Risk for Getting AMD?

Medical doctors aren't sure what causes AMD. Many risk factors have been found for the disease. One of the biggest risks is heredity. If someone in your family had AMD, your chances of getting it increase as well. As you get older, you are more likely to get AMD. Dry AMD usually shows up after the age of 60.

There are other risks for AMD as well. Do you smoke cigarettes, or did you smoke for a long time? That's a very significant risk factor for AMD. Also, whites tend to get AMD more often than African Americans. Women may get AMD more often than men.

People with high blood pressure may be at risk for AMD. Also, obesity increases your risk for AMD. If you don't eat enough fruits and vegetables, you don't get the eye healthy nutrients you need. You could be at risk for getting AMD as you get older.



## What Are the Symptoms of AMD?

When dry AMD first starts, you probably won't even notice it. Most people don't have symptoms in the earliest stages. Symptoms only start to appear when the disease gets worse.

At first, you might notice that the middle of your vision seems a little blurry. Or maybe things look distorted and oddly out of shape. Some people have trouble seeing when lighting is low. This can also be a sign of cataracts. If this happens to you, talk to your doctor.





National Eye Institute, National Institutes of Health.

But when dry AMD becomes wet AMD, there can be a sudden loss of your central vision. Untreated wet AMD can lead to a loss of your reading vision.

## How Do I Know If I Have AMD?

Most people find out they have AMD during a regular visit to the Eye M.D. This kind of doctor is called an ophthalmologist (af-thel-MA-leh-jist). This doctor will do many tests to check if you have AMD.

The Eye M.D. checks your vision using an eye chart. Your Eye M.D. dilates your eyes in order to examine the retina. By looking in the back of the eye, the doctor can check for AMD and look

for drusen.



Those are the small yellow particles that appear on the retina.

Your doctor should also give you a test using what's called an Amsler grid. If the lines in the center of the grid look wavy or distorted, you might have AMD. While using this test at home, if the Amsler grid ever looks different to you, see your doctor at once. You should then be sent to a retinal specialist, who can treat you.

Sometimes, the doctor will take a picture of the eye. The picture will tell the Eye M.D. if the disease is getting worse. The doctor might also use a dye test to check for the growth or leakage of new blood vessels. This is a sign of wet AMD. If you have any signs of wet AMD, your Eye M.D. will send you to see a retinal specialist.

#### How Is Wet AMD Treated?

There are many ways a retinal specialist can treat wet AMD. The treatments help to slow wet AMD from getting worse for some people.

Treating the retina with a "hot" laser is an older way to treat AMD and can be used for only a few patients. The area of wet AMD can be too large or too close to the center of the eye to be treated that way. Treatment by "cold" laser is newer. Most patients need multiple treatments.

Some newer treatments inject a drug in or around the eye. These drugs can help slow the growth of new blood vessels. These treatments try to stop blood vessels from leaking.



## What Can You Do About Dry AMD?

Vitamins and minerals can help slow down the progress from dry to wet AMD. So there are things you can do to slow it down and to help protect your vision.

First, eat a diet rich in fruits and vegetables. This might help to slow down the progress of dry AMD. Some foods contain vitamins and carotenoids (ka-ROT-in-noydz). Some common carotenoids are beta-carotene, lutein, and zeaxanthin (zee-uh-ZAN-thin). They are a type of nutrient called antioxidants (an-tee-OCKS-eh-dents). They offer protection from damage that can be





caused by free radicals. These are created in the body after oxygen reacts with cells. Antioxidants reduce free radicals before they do any cell damage. Also, omega-3 fatty acids, a type of fat that comes mostly from fish, may slow down AMD. Salmon is best, but also mackerel, trout, and tuna are good sources. Because of environmental issues, it is recommended to limit eating fresh fish to twice a week. Also, you can take omega-3 fish oil pills.

# Where to Find Vitamins and Carotenoids

The following foods have lots of the vitamins and carotenoids you need to slow down dry AMD:

Vitamin C: oranges, grapefruit, melon, broccoli

Vitamin E: whole grains, wheat germ, sunflower oil, safflower oil, canola oil, olive oil, sunflower seeds, almonds, hazelnuts/filberts, peanuts, cashews, walnuts, spinach, avocados, mangoes, blueberries, beans



Zinc: oysters, beef, chicken, pork, lamb, flounder, sole, sardines, cashews, walnuts, pumpkin seeds, sesame seeds, beans, dairy products

## Carotenoids (beta carotene, lutein, zeaxanthin):

- Fruits: grapes, oranges, apples, apricots, kiwis, mangoes, peaches, nectarines, cantaloupe, honeydew melon, grapefruit
- Vegetables: kale, collard greens, spinach, mustard greens, broccoli, green lettuce, peas, Brussels sprouts, squash, yellow pepper, corn, carrots
- Other: tomato juice, orange juice



## The Role of Vitamins in Dry AMD

Vitamins and minerals can help slow down dry AMD. A trial was done a few years ago called AREDS\*. It tested high doses of certain vitamins and minerals in people with AMD. It found that taking vitamins can lower the risk of getting advanced AMD by about 25 percent over 5 years. This works for people who are at high risk of losing their vision from AMD. These high doses can't be found in food alone. Taking a regular vitamin pill is not enough to stop AMD. Special eye vitamins can protect your vision.

These eye vitamins have the high doses that protected vision in one-quarter of patients in AREDS. They are available at your local drug store. You don't need a prescription to buy them. Some of the eye vitamins contain lutein and zeaxanthin, which might help protect the retina. Talk to your Eye M.D. about vitamin therapy.



Smoking is a significant risk factor for AMD.

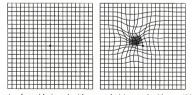
Smokers should try to stop. If you still smoke or have recently stopped, then you shouldn't take extra beta-carotene found in eye vitamins.

There may be an increased risk for lung cancer.

Another helpful suggestion is to protect your eyes from strong sunlight by wearing sunglasses.

## Living With Dry AMD

If you have dry AMD, see your Eye M.D. on a regular basis. This way, the progress of your AMD can be checked. Post an Amsler grid in a place



Amsler grid viewed with normal vision and with wet AMD.

you can easily see it every day. Check your vision in each eye. This is a way you can play an active role in your treatment. If the lines become bent or wavy, the AMD may be getting worse. Call your Eye M.D. at once. You should then be referred to a retinal specialist. (See the online list of these doctors at http://www.retinaspecialists.org)

Depending on how much AMD has affected your vision, you might need to make a few simple changes in your everyday life. Use extra lighting when you read, write, or sew. Read large-print books or use books on tape. Use bright colors so you can easily identify objects in your home. If the AMD gets worse, you might want to join a clinical trial to test a new treatment. To find a clinical trial for AMD, get on the Internet and go to http://www.nei.nih.gov/neitrials/index.aspx.



Join an AMD support group for patients and their caregivers. You can talk with other people who have AMD. Share what you know. Learn what works for others. If you get depression as a result of AMD, it can help to talk with others who have the disease. It's a normal response. If it happens to you, talk to your family doctor. You might need counseling or medicine to help you.



more about AMD. You

Use the Internet to find out more about AMD. You can also contact some of these groups by phone:

### Patient Organizations

- American Retina Foundation, http://www.savingvision.org
- Foundation Fighting Blindness, (888) 394-3937, http://www.blindness.org
- Macula Vision Research Foundation, (866) 462-2852, http://myrf.org
- AMD Alliance International, (877) AMD-7171, http://www.amdalliance.org
- Lighthouse International, (800) 829-0500, http://www.lighthouse.org
- American Macular Degeneration Foundation, (413) 268-7660, http://www.macular.org



### **Professional Organizations**

- American Society of Retina Specialists, (530) 566-9181, http://www.retinaspecialists.org
  - *The Retina Society*, (617) 227-8767, http://www.retinasociety.org
  - The Macula Society, (216) 839-4949, http://www.maculasociety.org
- American Academy of Ophthalmology, http://www.aao.org
- SmartSight: Low vision and vision rebabilitation services from the American Academy of Ophthalmology, http://www.aao.org/aao/patient\_ed/smartsight.cfm



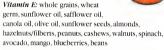


## Recipes for Healthy Living With AMD

Your Eye M.D. has told you that you have AMD. What can you do? Your first step can be eating in an eye-healthy way. Some foods are rich in the vitamins known to help slow down vision loss. The best foods to eat are those rich in carotenoids (ka-ROFin-noydz). These are the nutrients you find in colorful vegetables and fruits. These cards contain helpful living hints and recipes you can make at home.

## Foods Rich in Vitamins and Carotenoids

Vitamin C: oranges, grapefruit, melon, broccoli



Zinc: oysters, beef, chicken, pork, lamb, flounder, sole, sardines, cashews, walnuts, pumpkin seeds, sesame seeds, beans, dairy products

#### Carotenoids:

- Fruits: grapes, oranges, apples, apricots, kiwis, mangoes, peaches, nectarines, cantaloupe, honeydew melon, grapefruit
- Vegetables: kale, collard greens, spinach, mustard greens, broccoli, green lettuce, peas, Brussels sprouts, squash, yellow pepper, corn, carrots
- 3. Other: tomato juice, orange juice



## Going to the Chapel

Great news! Your favorite niece is getting married and it's a big, formal affair, So what are you going to eat at the reception? Be daring. Don't be afraid to speak up. Look for the fresh and colorful foods if there's a buffet. If it's a sit-down dinner, ask for a vegetable plate. When possible, make the eye-healthy choice. Go for the garden salad instead of the potato or pasta salad. The garden salad has plenty of red, orange, and yellow vegetables.

#### Feta Cheese and Watermelon Salad

- 1/4 small watermelon cut into cubes, with seeds removed
  - 100 g feta cheese, cubed or crumbled
  - 1½ cups spinach leaves, ripped into bite sized pieces

- 1/4 cup pine nuts
  - 1 large cucumber, peeled and cubed
  - 1 bunch basil (about ½ cup), cut in small pieces
  - 1 tablespoon extra virgin olive oil
  - Fresh ground black pepper

Put the melon, feta, and cucumber cubes in a mixing bowl. Add the spinach (or other leafy greens), basil, and pine nuts. Toss gently. Drizzle with the olive oil and black pepper. Toss gently again and serve.





## We Gather Together: It's Thanksgiving!

It's Thanksgiving. It's time for your family to gather together for one big meal. Worried your holiday foods won't be healthy? Relax. You don't have to starve yourself. Just keep some balance in what you eat. If you enjoy turkey and stuffing, eat colorful vegetables as well. Try to have fresh, eye-healthy vegetables like carrots, broccoli, and peppers. For dessert, skip the chocolate cake. Try the pumpkin pie or fruit salad instead.

#### **Apricot Lentil Soup**

- 3 tablespoons olive oil
- · 1 large onion, chopped
- · 2 cloves garlic, minced
- ½ cup dried apricots
- 1½ cups red lentils, rinsed
- 3 plum tomatoes, peeled, seeded, and chopped

- 5 cups vegetable stock
- ½ teaspoon ground cumin
- ½ teaspoon dried thyme, salt, and ground black pepper
- 2 tablespoons fresh lemon juice

Sauté the onion, garlic, and apricots in the olive oil. Add lentils and the soup stock. Bring to a boil, then reduce heat and simmer 30 minutes. Add tomatoes, cumin, thyme, and salt, and pepper to taste. Simmer 10 minutes more. Add lemon juice. Puree half of the soup in a blender, and then return to the pot.

#### In the Good Ol' Summertime Picnic

You're at a picnic or barbecue. So how do you eat right and still enjoy the day? Start by avoiding the fried foods, creamy sauces, and dressings. Colorful fruits and vegetables are best for your eye health. Choose whole grain breads for your sandwiches. Make a special treat for everyone: roast squash or

gram oreaus for your sandwiches, Make a special treat for everyone; roast squash or bell peppers on the grill. For dessert, bring along some fresh fruits like blueberries, melon, and oranges. They're crowd pleasers—and eye healthy!

## Cool Gazpacho

- 6 ripe tomatoes, peeled and chopped1 purple onion, finely
- chopped
- 1 cucumber, peeled, seeded, chopped
- 1 sweet red bell pepper (or green), seeded and chopped
- 2 stalks celery, chopped
- 1-2 tablespoons chopped fresh parsley
- 2 tablespoons chopped fresh chives

- 1 clove garlic, minced
  - 1/4 cup red wine vinegar
  - 1/4 cup olive oil
  - 2 tablespoons freshly squeezed lemon juice
  - · 2 teaspoons sugar
  - Salt and pepper to taste
    - 6+ drops of Tabasco
       sauce to taste
    - 1 teaspoon Worcestershire sauce
    - 4 cups tomato juiceWhole grain bread cut

into wedges

Combine the ingredients in a blender. Blend slightly, until you get them to the consistency you like. Place the soup in a glass storage container. Cover it tightly. Put it in the refrigerator overnight. Allow the flavors to blend. Serve chilled with a wedge of whole grain bread.

## Eating Right at the Mall

S pending a day at the shopping mall can really make you hungry. Still, the food choices at the food court might not look too eye healthy. So be a little creative. You'll find lots of foods you can eat that are eye

healthy. Try pizza with colorful veggies on top like peppers or broccoli. Order Chinese food. Chow mein or broccoli and chicken are two dishes with eye-healthy ingredients. For dessert, try a fruit salad or a fruit smoothic.

#### Vegetable Lasagna

- 16 ounces broccoli
- · 16 ounces cauliflower
- 2 tablespoons parmesan cheese
- 2 tablespoons fresh parsley, chopped
- 1 cup onions, chopped
- · 2 medium zucchini, sliced
- 1 cup sliced mushrooms
- 1½ cups carrots, coarsely 
   ½ shredded

- 9 cooked lasagna noodles (no salt or oil)
- 1 (26 ounce) jar spaghetti sauce
  - 2 teaspoons garlic, minced
  - 1 cup mozzarella cheese
    1 cup ricotta cheese or
    - cottage cheese
  - 1 cup mozzarella cheese
    ½ cup egg substitute

Combine frozen vegetables with garlic in a saucepan. Let thaw over a very low flame. Drain off the water. Sauté vegetables for 8 minutes. Sitr in cottage cheese, egg substitute, Parmesan cheese, and parsley. Arrange 3 lasagna noodles in a single layer in a  $13 \times 9$  inch pan. Top with one-third vegetables, one-third spaghetti sauce, and one-third cheese. Repeat each layer. Cover with foil. Bake at  $550^\circ$  for 50 minutes. Remove foil and bake for 10 more minutes. Let stand for 15 minutes before serving.

## Eating Eve Healthy at Home

Healthy Breakfast: Add blueberries or peaches to cereal or oatmeal for vitamin E. Sprinkle wheat germ onto hot oatmeal for nutritious vitamin E. Add cooked spinach. kale, or zucchini to your omelet.

Healthy Lunch: Use whole grain bread for your sandwiches. Top your sandwich with sprouts, Replace creamy porato salad or coleslaw with conscous salad or three-bean salad

Healthy Dinner: Don't overcook vegetables-keep them green and crunchy so they don't lose vitamins. Add sesame seeds to meat and chicken for zinc Add nuts and dried fruit to your salad for extra vitamins.

## Vegetable Stew

- · 1 yellow onion, chopped · 1 clove garlic, crushed
  - · 1 vam or sweet potato.
  - chunked · 1 carrot, sliced
  - · 1 celery stalk, sliced
  - 1 zucchini, sliced
  - ½ cup broccoli, chopped
  - · 4 large bell peppers

- 2 cups tomato sauce
  - 1 tablespoon parsley
  - ½ teaspoon paprika ½ teaspoon basil
  - ½ teaspoon chili powder
  - ¼ teaspoon mustard
  - ½ teaspoon cumin
  - ½ teaspoon pepper · 3 tablespoons olive oil

Cook the onions, garlic, potato, carrot, and celery in the olive oil in a large saucepan for 10 minutes. Add the rest of the ingredients. Cook it over low heat until the vegetables are tender. This should take about 35 minutes.



## Dining Out at a Restaurant

Do you have a hard time finding the eye healthy foods on a ment? Here's a tip. If the choice is between roasted chicken with spinach or creamy pasta, stick with the chicken. It's the better choice. Ask for a baked porato instead of fries on the side. Try to stick with lightly cooked vegetables and grilled meats. Also, when you're dining out, vegetarian options are often a good choice to find eye-healthy vitamins.

#### Couscous Salad

- · 2 cups couscous, cooked
- 10 ounces frozen spinach, thawed and drained
- 1/4 cup red bell pepper, diced small
- 1/4 cup cucumber, diced
  - ½ cup cherry tomatoes, cut in half
  - 2 cups tofu, firm, diced small (can substitute chicken)

- 1 cup garbanzo beans, canned drained and rinsed
- ¼ cup feta cheese, crumbled
  ½ cup scallions, sliced
- ½ cup scamons, suced
   ½ cup frozen corn ker-
- nels, thawed and drained

  1 tablespoon lemon juice
  - 1 ounce white wine
  - vinegar
     1 tablespoon soy sauce
- ½ cup extra virgin

olive oil

Mix couscous, spinach, red pepper, cucumber, tomato, tofu, garbanzo beans, feta cheese, scallions, and corn in a large mixing bowl. Toss all of these together. In a separate bowl, whisk the lemon juice, vinegar, soy sauce, and olive oil together. Pour this over the salad and mix thoroughly. Refrigerate it overnight. Serve with a lemon wedge.

## On the Road Again

Do you like to take long trips in the car? Do you have a recreational vehicle (RV)? Sometimes it's hard to eat out every day for a long time. But you can stay healthy while traveling. Go to the grocery store and buy local fruits and vegetables. Keep healthy snacks on hand. Stock the RV with nuts and seeds to snack on. Oranges and grapes make great refreshing snacks. When eating out, order water with lemon wedges, ask for sauce and dressing on the side, and choose grilled meats or vegetables instead of fried. Order sandwiches with whole grain bread.

#### Vegetable Wrap

- 1 can (15.5 ounces)
   black beans, rinsed and
  drained
- 1½ cups frozen corn kernels, thawed to room temperature
- 3 tablespoons chopped fresh cilantro
- 2 tablespoons chopped green chili peppers

- 4 scallions diced
- · 1 tomato, diced
- 1 tablespoon chopped garlic
- 6 fat-free flour tortillas, 10 inches in diameter
  - ¾ cup shredded cheddar cheese
  - ¾ cup low sodium salsa

Mix the black beans, corn, cilantro, chili peppers, scallions, tomatoes, and garlie in a pot. Stir to mix evenly. Cook over a low flame until mix-ture is hot. Warm 2 tortillas on cookie sheet in the oven. To serve place about ½ cup bean mixture on one tortilla. Top with 2 tablespoons cheese and 2 tablespoons of salsa. Fold in the sides and the bottom of the tortilla up over the filling, and then roll to close. Repeat with the remaining tortillas.

### When the Cold Wind Blows

In the wintertime, we want foods to warm us up. When it's cold outside it's a great time to cook warm comfort foods inside. It's also a good time to cook enough to freeze for another day. If you freeze soups and stews, you can quickly make a healthy meal when you don't feel much like cooking. There are other ways to keep your eyes healthy as well. You can also try vegetable soups or stews or vegetarian chili. or making whole grain bread or rolls.

Then invite a neighbor over to share your eye-healthy meal!



## Vegetarian Chili

- · 2 tablespoons extra virgin olive oil
- · 1 cup chopped red onion
- · 5 large cloves garlic. crushed or minced
- · 2 tablespoons chili powder
- · 2 teaspoons ground cumin
- · 2 cups juicy chopped tomatoes
- · 1 (15 ounce) can black beans, drained

- 1 cup water (or red wine)
- 1 cup chopped bell pepper (any color)
- 1 cup chopped zucchini 1 cup corn kernels
- · 1 cup chopped white or
  - portobello mushrooms
- · 1 cup chopped fresh cilantro, packed
- ½ teaspoon cavenne pepper
- Salt and pepper to taste

Heat the oil in a medium pot. Add onion, garlic, chili powder, and cumin. Sauté over medium heat until onion is soft, about 5 minutes. Add the rest of the ingredients (except the garnish) and stir. Bring to a boil. Lower the heat and simmer for 20 minutes or until vegetables are soft. Add more liquid if needed. Serve alone or over brown rice. Garnish with cheddar cheese onion, sour cream, guacamole, or fresh cilantro.

## When You Just Have to Have a Snack

Are the cupboards filled with chips or other unhealthy snacks? Replace them with nuts (walnuts, almonds, peanuts, hazefunts/fillerts, or cashews) or seeds (sunflower seeds or pumpkin seeds). Avoid cookies, cakes, muffins, and other sweet desserts. Buy fruits like oranges, kiwis, and manages.

Snack ideas: Thaw some of the soup you made on a cold wintry day. Keep cut veggie sticks and low-fat dressing/dip in the house. For a sweet snack, cut an apple into wedges and dip them into honey.

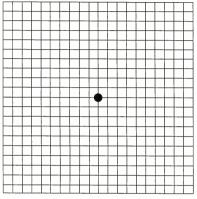
#### Three Yellow Vegetable Soup

- 1 large sweet potato (12 ounces), peeled and cut into chunks
- ½ pound carrots cut into chunks
- ¾ pound seeded butternut squash, peeled and cut into chunks
- · 2 teaspoons sesame seeds

- 2 cups low-fat (1%) milk
- ½ cup frozen orange juice concentrate
- ½ teaspoon salt
- · 1/4 teaspoon pepper
- 3 tablespoons sour cream
- 2 tablespoons minced chives

Place sweet potato, carrots, and squash in a steamer. Cover and steam until tender, about 12 minutes. In a small ungreased skillet, toast sesame seeds over medium heat for 3 to 5 minutes. Place cooked vegetables and orange juice concentrate in a blender. Mix until they're a smooth purce. Pour purce into a saucepan. Add milk, salt, and pepper. Simmer over low heat until heated. Ladle the soup into four shallow bowls. Top with a dollop of sour cream and a sprinkling of toasted sesame seeds and chives.

## Your Personal Daily Eye Test



When you have age-related macular degeneration, you should check your vision every day. You can do this with a tool called an Amsler grid, like the one seen here. To use your Amsler grid, do the following:

- 1. First, stick this grid on a place where you'll see it every day.
- If you wear glasses, make sure you have them on when you do the test
- 3. Keep the grid 14 inches away from your face.
- 4. Cover one eye at a time with your hand.
- 5. Stare at the center dot
- 6. Do any lines look wavy to you? Are any lines in the grid missing? Do any boxes look like they are a different size from the others? If so, call your eve doctor at once!

